UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,914	10/11/2001	Makoto Oyanagi	KYO-101	7458

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ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/973,914	OYANAGI, MAKOTO
	Examiner	Art Unit	
	Peter K. Huntsinger	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _06 December 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

           application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Claim Objections

2.   Claims 1-20 are objected to because of the following informalities: Multiple

misspellings are present in the claims. Examples of these include claim 4 of page 26

"wherein the print passes for one line of the scan data are twice" and claim 6 on page

27 "and stores data of the even bits of the scan data in an even bit data storage in the

first data storage every line of the scan data and stores data of the odd bits of the scan

data in an odd bit data storage in the first data storage every line of the scan data."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-7, and 10-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Iwai U.S. Patent 6,683,703 and Kanematsu et al. U.S. Patent

6,183,055.

        Referring to claim 1, Iwai discloses a multi-function printer which is a combination

of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising: a first data storage in

which a scan data scanned in by the scanner is stored (page memory 323 of Fig. 3, col.

9, lines 6-35); and a data classifier which classifies the scan data in a format suitable for

generating the print image data and stores it in the first data storage (CCD 334 of Fig. 3,

col. 10, lines 45-48). Pre scanned data is classified into even and odd data elements

which is then printed. Iwai does not disclose expressly a print executor which prints

using a plurality of print passes. Kanematsu et al. discloses a print executer which

generates a print image data having a data format suitable for a print processing (MPU

401 of Fig. 3, col. 10, lines 23-28) and performs printing by a print pass driving a print

head of the printer with the print head moved on the basis of the print image data (MPU

401 of Fig. 3, col. 7-8, lines 59-67, 1-2). Iwai and Kanematsu et al. are combinable

because they are from the same field of printing systems separating even and odd bit

data. At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to print data in print passes in the printing system of Iwai. The motivation

for doing so would have been to improve image quality and printing speed. Therefore, it

would have been obvious to combine Kanematsu et al. with Iwai to obtain the invention

as specified in claim 1.

Referring to claim 2, Kanematsu et al. discloses the resolution of the printer head is coarser than a resolution to be printed on a print medium by the printer (col. 3, lines 54-64), and the printer performs printing by a plurality of print passes for one line of the data (col. 15, lines 20-24).

Referring to claim 3, Iwai discloses the multi-function printer as set forth in claim 2, wherein the data classifier classifies the scan data into compliance with the even and odd bit data (col. 10, lines 50-59). Iwai does not disclose expressly classifying data into compliance with print passes. Kanematsu et al. discloses classifying data into compliance with even and odd bit data and print passes (col. 15, lines 19-24). Iwai and Kanematsu et al. are combinable because they are from the same field of printing systems separating even and odd bit data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to classify data in print passes in the printing system of Iwai. The motivation for doing so would have been to improve image quality and printing speed. Therefore, it would have been obvious to combine Kanematsu et al. with Iwai to obtain the invention as specified in claim 3.

Referring to claim 4, the claim language is determined by the examiner to read the multi-function printer as set forth in claim 2, wherein the print passes for one line of the scan data occur twice, and the data classifier classifies the scan data into even bits thereof and odd bits thereof and stores them in the first data storage. Kanematsu et al. discloses two print passes for one line of data (col. 15, lines 20-24). Iwai discloses classifying data into even and odd bits (col. 10, lines 45-48).

Referring to claim 5, Iwai discloses the multi-function printer as set forth in claim

1, wherein the data classifier comprises: a second data storage in which the scan data

scanned in by the scanner is temporarily stored (registers 111-114 of Fig. 4, col. 10,

lines 50-59); and a classificational executer which reads out the scan data from the

second data storage, classifies it and stores it (col. 10, lines 45-48) in the first data

storage (page memory 323 of Fig. 3, col. 9, lines 6-35). Pre scanned data is classified

into even and odd data elements which is then printed.

Referring to claim 6, Iwai discloses the multi-function printer as set forth in claim

5, wherein the classificational executer classifies the scan data into even bits and odd

bits, and stores data of the even bits of the scan data in an even bit data storage in the

first data storage every line of the scan data and stores data of the odd bits of the scan

data in an odd bit data storage in the first data storage every line of the scan data (col.

10, lines 45-48). Kanematsu et al. disclose the print executer executes an interlaced

processing that the data is extracted from the even bit data storage and the odd bit data

storage every other line respectively (col. 10, lines 37-39) (col. 14-15, lines 65-67, 1-4),

and executes the printing (col. 10, lines 50-52).

Referring to claim 7, Iwai discloses the multi-function printer as set forth in claim

6, wherein the classificational executer has a latch buffer of a predetermined data

length, and latches the scan data of the predetermined data length into the latch buffer

and obtains the scan data to be stored in the even bit data from even bits of the latch

buffer and the scan data to be stored in the odd bit data from odd bits of the latch buffer

(col. 8, lines 57-64).

Referring to claim 10, Iwai disclose the multi-function printer as set forth in claim 6, wherein the classificational executer is constituted of hardware (CCD 334 of Fig. 3, col. 10, lines 45-48).

Referring to claim 11, Kanematsu et al. disclose the multi-function printer as set forth in claim 10, wherein the interlaced processing executed in the print executer is performed as a software processing (col. 18, lines 1-7).

Referring to claim 12, Kanematsu et al. disclose the multi-function printer as set forth in claim 11, wherein the software processing is executed in a central processing unit, which is shared between the scanner and the printer and which is the only one in the multi-function printer (col. 18, lines 1-7).

Referring to claim 13, Iwai disclose the multi-function printer as set forth in claim 5, wherein the first data storage (page memory 323 of Fig. 3, col. 9, lines 6-35) and the second data storage (registers 111-114 of Fig. 4, col. 10, lines 50-59) are provided in different memories.

Referring to claims 14 and 20, Iwai disclose a multi-function printer which is a combination of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising: a classificational storing section which classifies the scan data according to an appropriate data format (CCD 334 of Fig. 3, col. 10, lines 45-48) and which stores them in a first data storage (page memory 323 of Fig. 3, col. 9, lines 6-35). Pre scanned data is classified into even and odd data elements which is then printed. Iwai does not disclose expressly a print image data generator which prints every reading out and a print executer that prints in the main scan pass direction. Kanematsu et al. disclose

printing one line of data by movements of a print head in a main scan pass direction by

X times (S104 of Fig. 6, col. 10, lines 37-39), a print image data generator which

sequentially reads out the classified scan data from the first data storage and generates

a print image data on the basis of the read-out scan data every reading out (MPU 401 of

Fig. 3, col. 10, lines 23-28); and a print executer which executes printing with the print

head moved in the main scan pass direction on the basis of the print image data

generated by the print image data generator (MPU 401 of Fig. 3, col. 7-8, lines 59-67, 1-

2). Iwai and Kanematsu et al. are combinable because they are from the same field of

printing systems separating even and odd bit data. At the time of the invention, it would

have been obvious to a person of ordinary skill in the art to print data in print passes in

the printing system of Iwai. The motivation for doing so would have been to improve

image quality and printing speed. Therefore, it would have been obvious to combine

Kanematsu et al. with Iwai to obtain the invention as specified in claim 14.

Referring to claim 15, Iwai disclose the multi-function printer as set forth in claim

14, wherein the classificational storing section is constituted of hardware (CCD 334 of

Fig. 3, col. 10, lines 45-48).

Referring to claim 16, Kanematsu disclose the multi-function printer as set forth

in claim 15, wherein the print image data generator is implemented via a software

processing(col. 18, lines 1-7). Iwai discloses the multi-function printer has only one

central processing unit, which executes the software processing and which is shared

between the scanner and the printer (CPU 311 of Fig. 2, col. 8, lines 51-54).

Referring to claim 17, Kanematsu discloses the multi-function printer as set forth in claim 14, wherein the print image data generator also executes an interlaced processing that data is extracted from the scan data stored in the first data storage every predetermined lines (col. 10, lines 23-28).

Referring to claim 18, Iwai disclose the multi-function printer as set forth in claim 14, further comprising a second data storage in which the scan data scanned in by the scanner is temporarily stored (registers 111-114 of Fig. 4, col. 10, lines 50-59), wherein the classificational storing section sequentially reads out the scan data from the second data storage and classifies them (col. 10, lines 45-48).

Referring to claim 19, Iwai disclose a control method for a multi-function printer, which is a combination of a scanner and a printer (Fig. 1, col. 4, lines 58-62), comprising the steps of: classifying a scan data scanned in by the scanner according to an appreciate format for generating a print image data in actual printing (col. 10, lines 45-48); storing the classified scan data in a first data storage under classified conditions (col. 10, lines 45-59). Pre scanned data is classified into even and odd data elements which is then printed. Iwai does not disclose expressly a print executor which prints using a plurality of print passes. Iwai does not disclose expressly generating print data and printing using a plurality of print passes. Kanematsu et al. disclose generating the print image data, which has a data format appropriate for a print processing, on the basis of the data stored (col. 10, lines 23-28); and performing the print processing by a print pass with a print head of the printer moved on the basis of the print image data (col. 7-8, lines 59-67, 1-2). Iwai and Kanematsu et al. are combinable because they are

from the same field of printing systems separating even and odd bit data. At the time of

the invention, it would have been obvious to a person of ordinary skill in the art to print

data in print passes in the printing system of Iwai. The motivation for doing so would

have been to improve image quality and printing speed. Therefore, it would have been

obvious to combine Kanematsu et al. with Iwai to obtain the invention as specified in

claim 19.

5.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai U.S.

Patent 6,683,703 and Kanematsu et al. U.S. Patent 6,183,055 as applied to claim 6

above, and further in view of Wakasugi U.S. Patent 6,157,937.

        Referring to claim 8, Iwai discloses classifying scan data into even and odd bit

data but does not disclose expressly utilizing a even and odd look up table. Wakasugi

discloses a even and odd look up table (col. 4, lines 1-3). Iwai and Wakasugi are

combinable because they are from the same field of image processing. At the time of

the invention, it would have been obvious to a person of ordinary skill in the art to utilize

even and odd look up tables to convert data. The motivation for doing so would have

been to improve the speed of determining the even and odd numbers. Therefore, it

would have been obvious to combine Wakasugi with Iwai to obtain the invention as

specified in claim 8.

6.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwai U.S.

Patent 6,683,703 and Kanematsu et al. U.S. Patent 6,183,055 as applied to claim 6

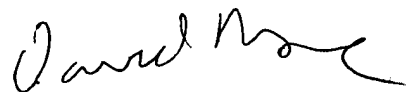above, and further in view of Merna et al. U.S. Patent 5,239,312.

Referring to claim 9, Kanematsu discloses the multi-function printer as set forth in

claim 6, wherein the print executer alternately repeats: a processing for reading out the

data for even bit data and odd bit data (S103 of Fig. 6, col. 10, lines 23-28), performing

one print pass (S104 of Fig. 6, col. 10, lines 37-39) and feeding the print medium (S105

of Fig. 6, col. 10, lines 42-44), and; a processing for reading out the scan data for the

even bit data and odd bit data (S103 of Fig. 6, col. 10, lines 23-28), performing one print

pass (S104 of Fig. 6, col. 10, lines 37-39) and feeding the print medium (S105 of Fig. 6,

col. 10, lines 42-44). Kanematsu does not disclose expressly wherein the remainder

between the division of the number of lines read and the number of lines fed is non-

zero, which is how the examiner has determined claim 9 to read. Merna et al. disclose

having the remainder between the division of the number of lines read and the number

of lines fed is non-zero (Fig. 4, col. 6, lines 7-14). Iwai, Kanematsu et al., and Wakasugi

are combinable because they are from the same field of printing systems. At the time of

the invention, it would have been obvious to a person of ordinary skill in the art to move

the print head a number of lines which is different than the number of lines printed. The

motivation for doing so would have been to improve image quality by avoiding the

effects of deterioration on the individual print jets. Therefore, it would have been

obvious to combine Wakasugi with Iwai and Kanematsu et al. to obtain the invention as

specified in claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Peter K. Huntsinger whose telephone number is

(571)272-7435. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Moore can be reached on (571)272-7437. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

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